

Notice of Allowability

Application No.

10/759,818

Examiner

Philip Wang

Applicant(s)

ZEMAN ET AL.

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/26/2007.
2. ☒ The allowed claim(s) is/are 1-14, 17-19 and 21-43.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This office action is in response to amendment filed on 4/26/2007.
2. Per Applicant's request, claims 1-7, 9, 17, 19, 21, 23, 25, 28, 34, and 42 have been amended; claims 15, 16, and 20 canceled; and new claim 43 entered.
3. The objection to the claims 15, 20 and 21 are withdrawn in view of the Applicant's cancellation/amendment of the claims.
4. The *35 USC § 112* rejection of claims 15 and 20, and 42 are withdrawn in view of the Applicant's amendment.
5. Claims 1-14, 17-19, and 21-43 are allowed.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Platz (Reg. No. 60,013) on July 11, 2007.

The application has been amended as follows:

1. (Currently amended) A method for initiating a bifurcated process to be debugged by a debugger, where said bifurcated process is scheduled using a shadow process running in a first execution

environment and where said bifurcated process is executed using a trusted agent process running in a second execution environment, said method comprising:

initiating said shadow process in debug mode in said first execution environment, wherein the shadow process comprises a shadow process thread;

initializing said trusted agent process in said second execution environment, wherein the trusted agent process comprises a trusted agent thread corresponding to the shadow process thread;

attaching said debugger to said shadow process;

once said debugger is attached, configuring said shadow process to schedule execution of said bifurcated process by said trusted agent.

21. (Currently Amended) A system comprising:

a first execution environment that comprises a scheduler, said first execution environment being adapted to schedule and dispatch a plurality of threads for execution on a processor, said first execution environment being further adapted to initiate a shadow process in debug mode in said first execution environment, to attach a debugger to said shadow process, and to, upon receipt of an indication that execution should begin, to schedule at least one thread of a trusted agent process on a second execution environment;

a second execution environment that is adapted to dispatch a plurality of second threads for execution on said processor, said second execution environment being

further adapted to initialize said trusted agent process corresponding to said shadow process in said second execution environment, and to, upon completion of said initialization, send an indication that execution should begin to said first execution environment, wherein the trusted agent process includes a trusted agent thread that corresponds to a shadow process thread.

43. (Currently amended) A method for debugging a bifurcated process comprising:

scheduling a bifurcated process using a shadow process including at least one shadow thread running in a first execution environment and where said bifurcated process is executed using a trusted agent process running in a second execution environment, wherein said trust agent includes trusted agent threads ~~threads~~, each of said trust agent threads corresponding to one of said shadow process threads ~~threads~~;

receiving a request message from a debugger regarding a resource;
verifying an identity of said requested resource from said request message; performing the request in said request message; and
responding to said request message with the result of said request.

Reasons for allowance

The following is an examiner's statement of reasons for allowance:

The cited prior art taken alone or in combination fail to teach the limitation

of initiating said shadow process in debug mode in said first execution environment, wherein the shadow process comprises a shadow process thread; initializing said trusted agent process in said second execution environment, wherein the trusted agent process comprises a trusted agent thread corresponding to the shadow process thread; attaching said debugger to said shadow process; once said debugger is attached, configuring said shadow process to schedule execution of said bifurcated process by said trusted agent as recited in independent claims 1, 21, 36, and 43.

The closest cited prior arts, "Process Hijacking", by Zandy et al. discloses a bifurcated process showing debugging function. However, Zandy et al. does not specifically disclose a debugger attached to a shadow process in a first execution environment to debug a work process with corresponding threads in a second execution environment.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Art Unit: 2191

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Wang whose telephone number is 571-272-5934. The examiner can normally be reached on Mon - Fri 8:00 - 4:00PM. Any inquiry of general nature or relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


WEI ZHEN
SUPERVISORY PATENT EXAMINER